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ABSTRACT

Most discussions of literacy involve at least two types: low literacy (involving knowledge and use of the strategies and conventions important to reading, writing, and vocabulary development) and high literacy (including these competencies along with a number of thinking and reasoning strategies that augment and deepen these abilities). Turning this model of literacy into a working classroom program involves a careful balance of freedom and focus. Using unstructured (free reading, oral reading, and poetry reading) and structured (reading, writing, and vocabulary workshops) activities balances the need for a free-flowing language environment and the need for focused instruction on strategies. The workshop approach is founded on three principles: time (an instructional pace allowing for natural and unhurried learning), choice (freedom of selection of tasks and the manner those tasks are performed), and community (students and teachers sharing the processes and products of their reading, writing, and thinking). Workshops commonly include a mini-lesson, an activity period, and a sharing time. The vocabulary workshop plays a central role in connecting the reading and writing workshops. Using a semantic cluster approach, students are presented words in the form of individual student vocabulary wordbooks. Based on the first year of field testing, the high literacy approach positively affects students in a number of areas. (Lists of categories of thinking and reasoning skills, of words in a semantically related cluster and of 61 semantic clusters, a diagram of the model of high literacy, pre- and post-intervention writing samples, and 16 references are attached.) (RS)

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INTEGRATING HIGH AND LOW LITERACY: A WORKING MODEL

by

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Aurora, Colorado

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It can be said without exaggeration that literacy is basic to individual and societal development. Literacy, likewise, is fundamental to technological advances. Some economists believe that a 40 percent literacy rate is a necessary condition to initiate and maintain economic development. For example, technical advances in open-sea navigation, map and clock making, and production of precision instruments that began in Europe in the 16th Century can be directly traced to the growth of literacy at that time.

People who are not literate are placed at a serious disadvantage in our society. Additionally, they face the social stigma of being different. They face years of repeated failure in school because the understanding and development of almost all school-related knowledge assumes a certain level of literacy. In addition to academic problems, if one is not literate in this society, he faces a variety of more practical problems, including obtaining a driver's license, navigating in the physical environment, learning a skill, and obtaining a job. In short, an illiterate person is handicapped in his ability to lead a normal, productive life.

But what exactly is literacy? Most discussions of literacy involve at least two types: low literacy and high literacy. Low literacy is commonly described as the ability to read and write in a manner consistent with the adult norms of a society. For example, Tuman (1987) described low literacy as the ability to read with understanding anything that one can understand if it is spoken, and the ability to write so that it can be read, anything that one can say. From this perspective, literacy simply involves a knowledge of both the declarative and procedural knowledge important to reading and writing.

Declarative knowledge is usually described as knowledge of <u>what</u> (Paris, Lipson & Wixson, 1983). At a very basic level, declarative knowledge is factual in nature. Relative to reading and writing, declarative knowledge is usually

described in terms of conventions. For example, some of the conventions important to reading are:

- Reading top to bottom and left to right
- Letter/sound relationships
- The format of a textbook
- The form of different discourse types
- Literary conventions such as foreshadowing and conflict

Although there is some controversy over how much time should be spent on the conventions (declarative knowledge) important to reading (especially in terms of relatively lower order conventions such as letter/sound relationships) and how it should be taught (in isolation or as part of the act of reading), there is general agreement that declarative knowledge is an important part of effective reading.

Writing also includes an understanding of declarative information (conventions) important to its effective use. Relative to writing, some of the conventions commonly taught are:

- Punctuation
- Spelling
- Diction
- Rhetorical conventions such as paragraphing and leads
- Various discourse forms such as the research paper

Again, there are differing opinions as to the emphasis that should be placed on these conventions (especially the lower-order conventions such as punctuation and spelling) and the manner in which they should be taught (e.g., in a drill and practice format or as part of the editing process). However, as with reading, there is general agreement that conventions have their place in writing instruction.

Procedural knowledge is conceptualized as knowledge of "how to" (Paris, Lipson & Wixson, 1983). Relative to reading and writing, procedural knowledge

manifests as strategies to be used within the acts of reading and writing. For example, a strategy one might employ to improve reading comprehension is Ogle's K-W-L (1986) which systematically guides one through a process of activating prior knowledge, making and then verifying predictions. A strategy one might employ within writing is to brainstorm ideas and then use semantic webbing as a way of "rehearsing" the topic of concern. Low literacy, then, involves a knowledge of and facility with both the conventions and strategies important to the acts of reading and writing. However, it also involves a knowledge of and facility with vocabulary.

Of growing interest to researchers and theorists is the place of vocabulary within reading and writing. Specifically, vocabulary seems to be at the core of both cognitive processes. At a very basic level, one cannot read text within which a critical mass of words are not understood. Similarly, if the writer does not have at her disposal a rich store of labels (words) for concepts germane to the topic, then the composing process will be severely hampered.

Although there has been an assumption that the processes of reading and writing quite naturally foster vocabulary development in an indirect manner, recently there have been calls for more direct vocabulary instruction in such a way as to integrate it with the reading and writing processes. Specifically, in a summary of the vocabulary research, Nagy (1988) has asserted that vocabulary instruction should utilize an integrated approach in which some vocabulary is taught directly and is then used in meaningful ways in reading and writing. He further asserts that vocabulary is both instrumental to and benefactor of reading and writing. That is, vocabulary is an instrument used within effective reading and writing; however, it is also developed as a by-product of effective reading and writing.

A complete definition of literacy defined in the low sense, then, must include vocabulary development. We might say that low literacy consists of a knowledge of strategies and conventions germane to reading and writing, along with vocabulary development adequate to support both processes. What, then, is high literacy?

High literacy, by definition, subsumes low literacy. That is, it includes reading, writing and vocabulary development. In addition, it includes the use of specific thinking and reasoning strategies. Recently, there has been a great deal of research and theory on the rationale and viability of direct instruction in thinking. (For a review of various programs and practices for teaching thinking, see Costa, 1985.) Although there is general agreement that thinking and reasoning are automatically and quite naturally used within any complex cognitive process such as reading, writing, or vocabulary development, there is also agreement that with instruction in specific strategies, one can learn to think and reason more effectively. A useful metaphor in understanding this point is breathing. Everyone can breathe (think and reason). However, everyone can learn to breathe (think and reason) more effectively. Similarly, everyone utilizes thinking and reasoning during reading, writing and vocabulary development. However, via the use of specific strategies, everyone can learn to think and reason more effectively during reading, writing and vocabulary development. Relative to high literacy, this implies that the integration of some thinking and reasoning strategies into the teaching of reading, writing and vocabulary would greatly increase the depth and breadth of that learning.

Within this model, we have identified some basic areas or categories of thinking and reasoning strategies that can be used to enhance reading, writing and vocabulary development. These are briefly described in Figure #1. (For a

description of the specific strategies within these categories, see Marzano, Marzano, Paynter & Pickering, 1989.)

Figure #1 Here

To illustrate how the strategies within these general categories might be used, consider imagery. Although students naturally use imagery while they read, write and learn vocabulary, specific imaging strategies can enhance all of these endeavors. For example, the simple strategy of occasionally stopping while you are reading to review the information that has been covered by creating a rich mental picture of the important points can greatly enhance reading comprehension. The strategy of "mentally rehearsing" or creating mental pictures about a writing topic during the initial phase of the composition process can greatly enhance one's writing. Similarly, the strategy of picturing the meaning of a newly learned word in the "mind's eye" while hearing the sound of the word and seeing the spelling can greatly enhance vocabulary development.

In summary, low literacy involves a knowledge and use of the strategies and conventions important to reading, writing and vocabulary development. High literacy includes these competencies along with a number of thinking and reasoning strategies that augment and deepen these abilities. The full high literacy model might be depicted like Figure #2.

Figure #2 Here

OPERATIONALIZING HIGH LITERACY

Turning the model in Figure #2 into a working classroom program involves a careful balance of freedom and focus. Specifically, much of the recent theory in

whole language instruction (Goodman, 1986; Shanklin & Rhodes, 1989) has noted that language learning of all types (e.g., reading, writing and vocabulary) must take place in a relatively free flowing linguistic environment in which students can engage in meaningful language activities. Among other factors, such an environment includes the following:

- a wide variety of reading material
- emphasis on reading and writing experiences that are meaningful to individuals and groups of students
- a focus on meaning rather than language itself

Among others, such an environment excludes the following factors:

- isolated skills instruction
- holding students back from literary experiences based on a belief that they do not have requisite skills for the experience
- use of leveled readers (such as basals) that move students from one predetermined set of experiences to another

In short, whole language emphasizes the wholistic and personal-social nature of literacy development. In seeming juxtaposition to this is the current research and theory on strategy development that highlights the necessity for a high level of instructional focus. Specifically, a good deal of current research indicates that developing expertise in any given area is a function of strategy instruction that must include a clear model of the strategy and time to practice the strategy in an environment rich in feedback (Alexander & Judy, 1988; Derry & Murphy, 1986). How, then, does one balance the need for a free flowing language environment replete with many opportunities for student choice and the need for focused instruction on strategies? The model proposed here does so with the use of unstructured and structured literacy activities.

Unstructured Literacy Activities

Unstructured literacy activities include free reading, oral reading and poetry reading. The purpose of these activities is to provide students with opportunities to enjoy different aspects and types of literature without any overriding objective other than enjoyment. All three types of unstructured literacy activities offer students unique literary experiences.

Poetry reading can be a great source of enjoyment for both students and teachers. In this model, we recommend that students and teachers engage in poetry reading each day for a period of at least five minutes. A brief discussion of the feelings and emotions that the poem evokes may follow as well as a discussion of situations in students' personal lives that might be related to the poem. Discussions may also occur on student interpretations of the poem, as well as comments on the enjoyment or lack of enjoyment they felt while the poem was being read.

Reading aloud refers to the teacher orally reading a book or short story to the class. Books are selected on the basis of their appeal to students and their coverage of different aspects of literature. The intent of the reading aloud activity is to provide varied and meaningful experiences with literature. The reading aloud activity also provides a common literary experience for discussion and analysis.

The final type of unstructured literacy activity is quiet reading. Here both students and teacher take time to read selections of their choice for pure enjoyment and entertainment.

Structured Literacy Activities

The structured literacy activities are embodied in the workshop approach. There are three suggested workshops: the reading workshop, the writing workshop, and the vocabulary workshop. During each workshop, the thinking and reasoning strategies are reinforced, along with the strategies and conventions important to

each workshop. That is, during the reading workshop, reading strategies and conventions are reinforced along with thinking and reasoning strategies. During the writing workshop, the strategies and conventions of writing are reinforced along with the thinking and reasoning strategies, and so on.

The reading and writing workshops take about 45 minutes each and are conducted on a daily basis. The vocabulary workshop takes about 20 minutes and is conducted three times per week. In all, the structured and unstructured literacy activities take from two hours ten minutes to two and a half hours per day. Below is a suggested time line for these activities:

15 minutes	Read aloud
45 minutes	Reading workshop
Five minutes	Poetry reading
45 minutes	Writing workshop
25 minutes	Quiet reading
20 minutes	Vocabulary workshop (Three days per week)

One should note that for variety, the order of these events are changed on a continual basis.

The workshop approach has a rich history, especially within the literature on writing instruction. Specifically, Calkins and Harwayne (1987) and Atwell (1987) have described the workshop approach in writing; Hansen (1987) and Butler and Turbill (1987) have described adaptations of the writing workshop to teaching reading.

The workshop approach as described here is founded on three principles: (1) time, (2) choice and (3) community.

Time refers to an instructional pace that allows for natural and unhurried learning. When adequate, uninterrupted blocks of time are provided within the workshop approach, students have the opportunity to:

- Browse through books, read parts of books, decide if it's "just the right" book.
- Read entire books.
- Reread a book.
- Consult and interact with others, seek help from others, listen to and be listened to.
- Think about the project, book, or concept they have selected for study; make connections with other experiences they have had.
- Enjoy, reflect, appreciate and dream.
- Engage in long-term projects.
- Rework or fine-tune a project.
- Discover meaning for things they did not know.
- Experiment with and explore words and concepts.
- Reflect on what they have learned.

Choice refers to freedom of selection as to the type of task to be performed and the manner in which it will be performed. For example, using the workshop approach, students:

- Select what they will read, write, or learn.
- Explore words and concepts of personal interest.
- Participate in activities that are open-ended and allow for personal interpretation.
- Identify the manner in which they wish to demonstrate or publish the products of their thinking.
- Decide to continue or discontinue a project.

Community refers to students and teachers sharing both the processes and products of their reading, writing and thinking. Through sharing, they become better acquainted and establish a sense that they can be a support to one another. Similarly, a teaching climate is fostered in which teachers and students start to see one another as coworkers. Community also involves eliciting and receiving feedback on both processes and products. For example, using the workshop approach, students:

- Explain their responses to other students.
- Create and explain meaning that other students will find interesting.
- Work cooperatively with other students on projects.
- Assume roles of authority.
- Publish and demonstrate their thinking processes and products.
- Share in the achievement and growth of coworkers.

All workshops, whether they be for reading, writing, or vocabulary development, commonly include: (1) a mini-lesson, (2) an activity period, and (3) a sharing time. The mini-lesson includes a presentation, demonstration, or modeling of the skills, strategies, or conventions to be practiced by students. This serves to create a communal frame of reference. At the beginning of the year, the mini-lessons commonly deal with procedural issues, such as how to select a book, protocols for sharing within a group, the use of the reading journal, and resources and materials available. After these procedures have been established, the mini-lessons reflect the needs of the classroom in regard to specific strategies or conventions. For example, if the teacher wants students to practice the skill of predicting during the reading workshop, she would first demonstrate or model a strategy for that skill using a book or passage of interest to students. The intent of that mini-lesson would be for students to have a clear understanding of what is involved in the specific prediction strategy.

The activity period accounts for the majority of time during the workshop. Here students work independently, in pairs, triads, heterogeneous, or homogeneous groups employing the strategy or convention demonstrated in the mini-lesson. For example, after the mini-lesson on the predicting strategy, students might read a story of their choice using the prediction strategy presented in the mini-lesson. It is not uncommon for an activity to continue into other workshops. That is, if the teacher has demonstrated a particularly lengthy writing strategy in the mini-lesson of the writing workshop, or simply wants to provide an extended period of time for students to work on projects, the activity period might span two or three workshops.

During the activity period, the teacher can participate in her own literacy development activities such as reading or can act as a model for students. In general, modeling will take the form of guiding individual students or small groups in the use of the strategies and conventions illustrated during the mini-lesson. When modeling is not occurring, the teacher elicits responses from individual students or groups of students. Conferencing is a critical part of this interaction. During conferencing the teacher meets with individual students, providing one-to-one feedback, support and instruction. Over time, the teacher and students begin to view the teacher's role as that of listener/facilitator. This suggests to students that their responses, understanding and expertise are valued, and a true learning community begins to evolve.

Sharing time involves the presentation by students of the products of their efforts, as well as their written reactions, insights and evaluations of the day's activity. Not only does sharing bring closure to the workshop, but it also allows students a time to discuss and rediscover what they have learned. They share new insights about a particular strategy they tried. Products such as stories, plays, postcards and poems are shared, discussed, reevaluated and enjoyed. During

sharing time, students have a chance to voice what they liked, offer ideas on how to improve pieces, or share similar experiences.

The Vocabulary Workshop as a Bridge

The reading and writing workshop are common components of most whole language approaches and (as cited previously) are discussed in various sources. However, the vocabulary workshop is a unique component of the approach described here.

The vocabulary workshop plays a central role in connecting the reading and writing workshops. It does so by developing in students a store of words derived from student reading that can be used in student writing. As is the case with the entire model, the vocabulary workshop combines instructional focus with flexibility. It is focused in that the subject of vocabulary instruction is a set of high frequency words students will encounter in their reading. These words are organized in semantically-related clusters. To illustrate, consider Figure #3.

Figure #3 Here

The words in Figure #3 are related in that they all deal with individuals in public offices. Presenting words in semantic clusters provides students with strong clues as to the meaning of unknown words. For example, assume students were presented with the words in Figure #3 and told that they are all related. A student might not know the words incumbent and delegate; however, she probably would know such words as mayor and governor. Her knowledge of mayor and governor would allow her to induce that the words incumbent and delegate probably have something to do with public offices. Although this would not provide an in-depth knowledge of the new words, it would provide an initial

linkage of unknown words to familiar information without much instructional intervention.

The activities engaged in as a part of the vocabulary workshops would then provide students with a deeper knowledge of the newly learned words. That is, using a semantic cluster approach, students are initially introduced to many new words; however, their knowledge of the words is then strengthened and deepened via the activities in the vocabulary workshop. For example, using strategies from the various categories of thinking and reasoning described in Figure #1, students might compare and contrast the semantic features of selected words within clusters (a matching strategy) or they might identify possible misuses of various words within clusters (an evaluating strategy).

The semantically clustered words are presented to students in the form of individual student vocabulary wordbooks. Each wordbook is divided into 61 semantic clusters. These are listed in Figure #4.

Figure #4 Here

These clusters were drawn from a study of over 13,000 words found in content-area reading materials and five standardized tests (Marzano, Kendall & Paynter, 1989). That study was based on an earlier work by Marzano and Marzano (1988).

There are three levels of individual student vocabulary wordbooks. Level 1 contains words in grades K, 1 and 2. Level 2 contains words appropriate for grades 2, 3 and 4. Level 3 contains words appropriate for grades 4, 5 and 6. Thus, as students progress from one level to the next, there is a one grade level overlap in words to ensure that students will always know some words within a given cluster. As students progress through the levels of their wordbooks, the number of

words increases. Specifically, Level 1 contains 1365 words, Level 2 contains 4545 words, and Level 3 contains 6250 words.

Where the vocabulary wordbooks provide a focus for vocabulary development (in that they bring to students' attention a set of words they will frequently encounter in their content-area reading), they also provide a format that allows students to study and integrate into their knowledge basic words of their own choosing. Specifically, as part of the vocabulary workshop, students are asked to add words to the clusters within their individual workbooks that they glean from their wide reading. As students read (during the reading workshop or during quiet reading), they note words of interest, the meanings of which they can surmise from context. These words are then placed in their individual vocabulary wordbooks under the appropriate cluster. Consequently, students are continually adding new words of their own choosing to their vocabulary wordbooks. This has the effect of personalizing the vocabulary wordbooks and the study of vocabulary. It also forms a vital link between vocabulary development and reading. Relative to reading, students become more aware of new words they encounter in their wide reading because these words are candidates for entry into their wordbooks. The wordbooks also provide a link to writing in that the vocabulary wordbooks are used as a source for generating ideas about writing topics. For example, using a strategy referred to as "search and gather," students "search" the clusters in their individual vocabulary wordbooks for interesting words relative to writing topics they might be considering. These words are then "gathered" or written on a single sheet of paper. They then become the starting place for brainstorming about a given topic. Students might use the "gathered" words to form "concept maps" that help them identify specific areas of interest to focus on within a given topic. The wordbooks are also used as a personalized thesaurus by students. For example, during the

revising phase of the composing process, students frequently use their wordbooks to replace "overused" words with more descriptive ones.

A PROMISING START

The high literacy model described here combines the teaching of reading, writing, vocabulary, and thinking and reasoning in an integrated fashion. The model has been field tested for a year in a variety of institutional settings. Although standardized achievement data have not been collected on the effect of the model at the time of the writing of this article, other forms of more qualitatively oriented assessment have been applied. (For a discussion of the field test results, see Marzano, Paynter and Marzano, in preparation.) Based on the first year of field testing, the high literacy approach appears to positively affect students in a number of areas. First, and perhaps foremost, students appear to view reading, writing, thinking/reasoning and vocabulary as an integrated, personalized whole. Their general attitude toward the wholistic approach might conservatively be described as enthusiastic. Secondly, the approach seems to affect specific skill areas. Reading, as measured by ability to comprehend increases dramatically, as does the amount of time students independently engage in reading. Writing is positively affected both in quality and quantity. Students write more, enjoy it more, and generate products of very high quality. Relative to vocabulary development, students not only learn a large number of new words, but they also exhibit a high level of interest in words in general, frequently initiating discussions and questions about words they encounter.

To more concretely (albeit briefly) illustrate the effects of the high literacy model on students, consider the two writing samples in Figure #5.

Figure #5 here

Both samples were written by Crystal, a fifth grade student in a classroom in which the high literacy model has been piloted. Sample A was written in September in response to the assignment "write about whatever you would like, and you have all the time you feel necessary." Sample B was written in May in response to the same directions. Although student writing ability will naturally improve from September to May in any given year, those maturational changes are not commonly as dramatic as those illustrated in Figure #5. The post-intervention essay is not only longer and more detailed, it is more mature in diction, use of rhetorical devices, syntax, and a host of other writing factors. What is even more heartening is that the quantity and quality of changes depicted in Figure #5 were commonly manifested by the vast majority of students in the study.

We believe that the high literacy approach as described here holds bright promise as a general language arts model. Further studies are currently underway to assess its effects on standardized test performance and on other aspects of student learning.

References

Alexander, Patricia, and Judith Judy. "The Interaction of Domain-Specific and Strategic Knowledge in Academic Performance." *Review of Educational Research*, vol. 58 (Winter 1988), pp. 375-404.

Atwell, Nancie. *In the Middle.* Portsmouth, NH: Heineman Press, 1987.

Butler, Andrea, and Jan Turbill. *Toward a Reading-Writing Classroom.* Portsmouth, NH: Heinemann Press, 1987.

Calkins, Lucy McCormick, and Shelley Harwayne. *The Writing Workshop: A World of Difference.* Portsmouth, NH: Heinemann Press, 1987.

Costa, Arthur (Ed.). *Developing Minds.* Alexandria, VA: Association for Supervision and Curriculum Development, 1985.

Derry, Sharon, and Debra Murphy. "Designing Systems That Train Learning Ability." *Review of Educational Research*, vol. 56 (Spring 1986), pp. 1-39.

Goodman, Ken. *What's Whole in Whole Language?* Portsmouth, NH: Heinemann Press, 1986.

Hansen, Jane. *When Writers Read.* Portsmouth, NH: Heinemann Press, 1987.

Marzano, Robert, and Jana Marzano. *A Cluster Approach to Elementary Vocabulary Instruction.* Newark, DE: International Reading Association, 1988.

Marzano, Robert, Lorraine Marzano, Diane Paynter, and Debra Pickering. *Literacy+: An Integrated Approach to Teaching Reading, Writing, Vocabulary and Reasoning.* Aurora, CO: Mid-continent Regional Educational Laboratory, 1989.

Marzano, Robert, Diane Paynter, and Lorraine Marzano. *A Study of the Effects of an Integrated Literacy Model.* Technical Report. Aurora, CO: Mid-continent Regional Educational Laboratory, in preparation.

Marzano, Robert, John Kendall, and Diane Paynter. *The Teacher Resource Book of Words in Clusters.* Aurora, CO: Mid-continent Regional Educational Laboratory, 1989.

Nagy, William E. *Teaching Vocabulary to Improve Reading Comprehension.* Urbana, IL: National Council of Teachers of English and the International Reading Association, 1988.

Ogle, Donna. "K-W-L: A Teaching Model that Develops Active Reading of Expository Text." *The Reading Teacher*, vol. 39 (February 1986), pp. 564-576.

Paris, Scott, Marjorie Lipson, and Karen Wixson. "Becoming a Strategic Reader." *Contemporary Educational Psychology, vol.* 8 (1983), pp. 293-316.

Shanklin, Nancy L., and Lynn K. Rhodes. "Transforming Literacy Instruction." *Educational Leadership*, vol. 46 (March 1989), pp. 59-63.

Tuman, Myron C. *A Preface to Literacy.* Tuscaloosa, AL: University of Alabama Press, 1987.

Figure 1

Categories of Thinking and Reasoning Skills

1. *Imagery*: Consciously using mental images to further process and explore information.
2. *Representation and Organization*: Organizing information for efficiency of processing and representing various organizational patterns.
3. *Inference*: Deducing and inducing information not immediately evident.
4. *Matching*: Comparing, contrasting and classifying information.
5. *Extending*: Generating analogies, metaphors and new frames of reference for information.
6. *Evaluating*: Judging the accuracy of information.
7. *Valuing*: Identifying the personal value ascribed to information and assessing the thinking behind it.
8. *Decision Making*: Systematically choosing among alternatives.
9. *Problem Solving*: Overcoming obstacles toward a goal.

Figure 2

A Model of High Literacy

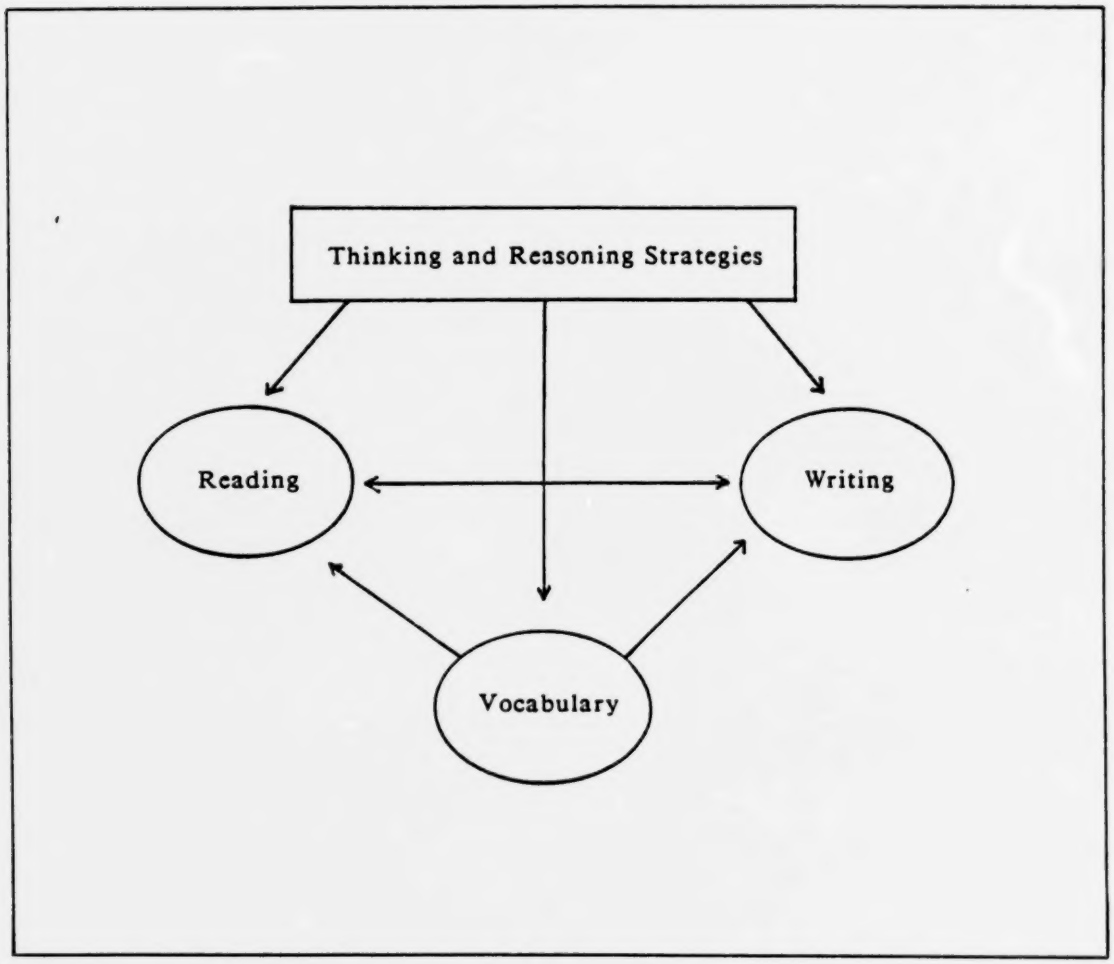


Figure 3

Words in Semantically Related Clusters

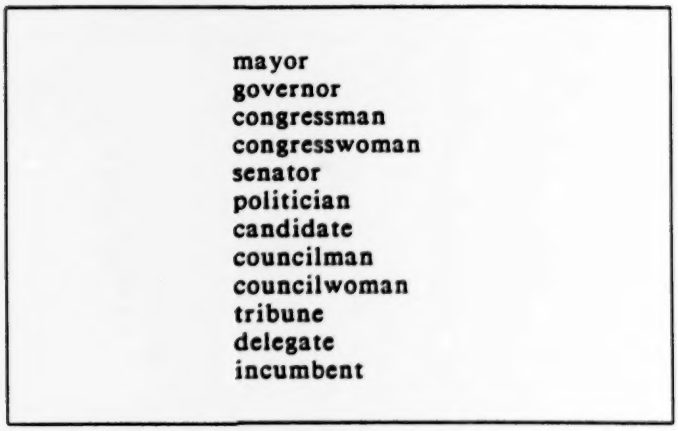


Figure 4

61 Semantic Clusters

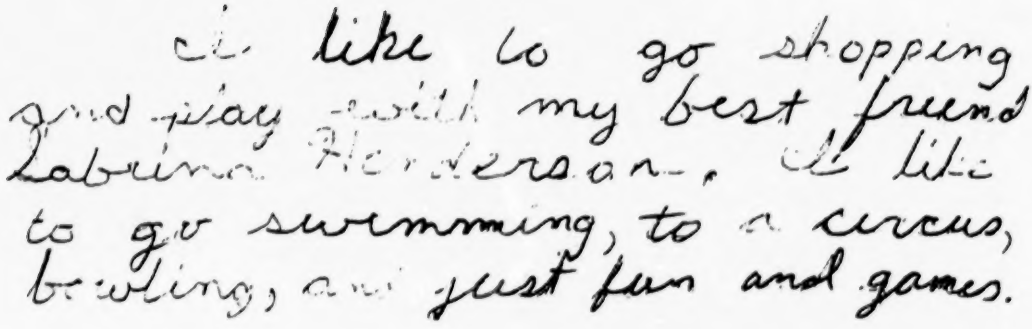
1. Occupations/Pursuits
2. Types of Motion/Activity
3. Size/Quantity/Weight
4. Animals
5. Feelings/Attitudes
6. Food Types/Meal Types
7. Time
8. Machines/Engines/Tools
9. Types of People
10. Communication
11. Transportation
12. Mental Actions/Thinking
13. Human Traits/Behavior
14. Location/Direction
15. Literature/Writing
16. Water/Liquids
17. Clothing
18. Places Where People Might Live/Dwell
19. Noises/Sounds
20. Land/Terrain
21. Dwellings/Shelters
22. Materials and Building
23. The Human Body
24. Vegetation
25. Groups of Things
26. Value/Correctness
27. Similarity/Dissimilarity
28. Money/Finance
29. Soil/Metal/Rock
30. Rooms/Furnishing/Parts of Dwellings/Buildings
31. Attitudinals
32. Shapes/Dimensions
33. Destructive and Helpful Actions
34. Sports/Recreation
35. Language
36. Ownership/Possession
37. Disease/Health
38. Light
39. Causality
40. Weather
41. Cleanliness/Uncleanliness
42. Popularity/Knowableness
43. Physical Traits of People
44. Touching/Grabbing Actions
45. Pronouns
46. Contractions
47. Entertainment/The Arts
48. Walking/Running Actions
49. Mathematics
50. Auxiliary/Helping Verbs
51. Events
52. Temperature/Fire
53. Images/Perceptions
54. Life/Survival
55. Conformity/Complexity
56. Difficulty/Danger
57. Texture/Durability
58. Color
59. Chemicals
60. Facial Expressions/Actions
61. Electricity/Particles of Matter

Figure 5

Pre- and Post-Intervention Writing Samples

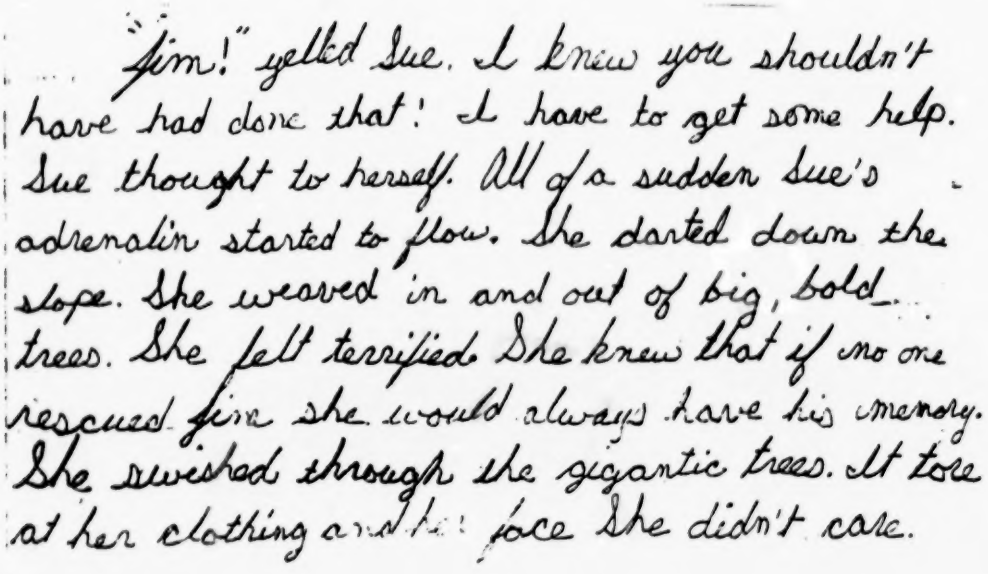
A

(Pre-Intervention Sample)


I like to go shopping
and play with my best friend
Sabrina Henderson. I like
to go swimming, to a circus,
bowling, and just fun and games.

B

(Post-Intervention Sample)


"Jim!" yelled Sue. I knew you shouldn't
have had done that! I have to get some help.
Sue thought to herself. All of a sudden Sue's
adrenalin started to flow. She darted down the
slope. She weaved in and out of big, bold
trees. She felt terrified. She knew that if no one
rescued Jim she would always have his memory.
She swished through the gigantic trees. It tore
at her clothing and

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Sue thought about how much fun she had with her best friend, Jim. Sue panicked. She couldn't ski any faster. Sue kept thinking about what Jim said about going under the ropes.

While Sue was in those deep thoughts, she woke up. There in front of her was a baby deer. She had to stop. She was going so fast that she hit the deer. Sue let out a bloodcurdling scream. She fell. She stood back up and sped down the mountain. She felt forlorn when she remembered Jim.

Sue was astonished when she was at the bottom of the mountain. She skied down to the ski patrol office and explained what had happened to Jim. The ski patrol sped up the mountain on thier snowmachines. The snowmachines made Sue jitter and vibrate. Five minutes later they arrived at the place where the avalanch take place. Ten minutes later they found Jim. He wasn't breathing. They take him to the hospital. The doctor put him on life support.

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Sue sat in a chair in Jim's room. She cried and cried. She thought Jim would die. All of a sudden, Jim started blinking his eyes. When Sue looked up his eyes were open. Sue ran to his side. Then when the doctor came in he said visiting hours were over. Sue came back the next day. They take Jim off life support. "Sue!" said Jim in a jubilant voice. "How are you?" "Fine," said Sue. "The doctor said that I get to go home in two days." "That's wonderful," said Sue.

When Sue and Jim grew up they still went skiing together, but never ever went under the ropes again.